



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/418,562	10/15/1999	JACOBUS C. HAARTSEN	040070-549	9055
21839	7590	06/15/2005		EXAMINER
BURNS DOANE SWECKER & MATHIS L L P				ODOM, CURTIS B
POST OFFICE BOX 1404				
ALEXANDRIA, VA 22313-1404			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/418,562	HAARTSEN, JACOBUS C.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Curtis B. Odom	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 18 February 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-8, 10, 12-23, 25 and 27-46 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-8, 16-23 and 35-46 is/are rejected.  
 7) Claim(s) 10, 12-15, 25 and 27-34 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 15 October 1999 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### *Response to Arguments*

1. Applicant's arguments filed 8/9/2004 and 2/18/2005 have been fully considered but they are not persuasive. The examiner agrees that Gillis et al. (U. S. Patent No. 5, 323, 447) does not disclose the claim limitation "a determination as to the selection of a hop channel as the substitute hop channel from the set of allowable hop channels is made each time the selected hop channel belongs to the set of forbidden hop channels. However, after carefully reviewing Bergstrom et al. (previously cited in Office Action 5/7/2004), it is the understanding of the examiner that Bergstrom et al. does in fact disclose the limitations of the currently amended independent claims. In applicant's arguments filed on 8/9/2004, the applicant states that Bergstrom et al. does not disclose "using a time-varying parameter to select, at the present phase, a substitute hop channel from the set of allowable hop channels, wherein the time-varying parameter is independent of conditions on the physical channel". However, it is the understanding of the examiner that Bergstrom et al. does in fact disclose this limitation. Bergstrom et al. discloses that when a selected hop channel belongs to a set of forbidden hop channels (prohibited frequencies) a new (second) frequency is generated from the set of allowable hop (permissible frequencies) channels (column 5, line 49-column 6, line 28). The new (second) frequency is generated using a random number (time-varying parameter) to select a frequency from the set of allowable hop channels (column 3, lines 16-35). It is the understanding of the examiner that the operation of generating the new (second) frequency using

the random number is performed at the present phase of selecting a substitute hop channel.

Thus, it is the understanding of the examiner that the present application does not constitute patentability over Bergstrom et al. based on the above claim limitation.

### *Claim Objections*

2. Claims 35 and 37 objected to because of the following informalities: The phrase "the previously selected substitute channel" is suggested to be changed to "a previously selected substitute channel". Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8, 16-23, and 35-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergstrom et al. (previously cited in Office Action 11/10/03)

Regarding claim 1, Bergstrom et al. discloses a method of selecting a hop channel for use in a channel hopping communication system that communicates over a physical channel includes a sequence of hop channels, comprising a set of forbidden hop channels and a remaining set of

Art Unit: 2634

allowable hop channels (column 2, lines 62-65), wherein the channels with interference are forbidden hop channels, the method comprising:

selecting (column 2, lines 4-16) a hop channel from the sequence as a function of a present phase; and

if the selected hop channel belongs to a set of forbidden hop channel then using a time-varying parameter to select, at the present phase, a substitute hop channel from the set of allowable channels (column 3, lines 13-65 and column 5, line 49-column 6, line 28, see also Response to Arguments above), wherein the time-varying parameter (random number) is independent of conditions on the physical channel and a determination as to the selection of a hop channel as the substitute hop channel from the set of allowable hop channels is made each time the selected hop channel belongs to the set of forbidden hop channels (column 5, line 49-column 6, line 28), wherein each time fx is a forbidden hop channel, a second (new) frequency is generated from the allowable hop channels (column 3, lines 13-65).

Bergstrom et al. does not disclose if the selected hop channel is an allowable hop channel, then using the selected hop channel for communication during the present phase and using the substitute hop channel for communication during the present phase

However, Bergstrom et al discloses that depending on a status value, the selected hop channel or the substitute hop channel would be used for transmission (column 2, lines 21-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that if the state value met a certain specification, then the selected hop channel would be an allowable hop channel and used for communication during a present

phase, but if the status value did not meet a certain specification, then the substitute hop channel would be used for communication during the present phase.

Regarding claim 2, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter is a clock value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock value could have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 3, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter and the present phase are derived from the same clock value. However, it would have been obvious to one skilled in the art at the time the invention was made to derive the time-varying parameter and the present phase from the same clock value to eliminate phase offset from processes in the device.

Regarding claim 4, which inherits the limitations of claim 1, Bergstrom et al. further discloses the time-varying parameter is a randomly selected value (column 3, lines 13-65, random number).

Regarding claim 5, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter is a pseudo-randomly selected value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that since the time-varying parameter of Bergstrom et al. is a randomly selected value (column 3, lines 13-65) that that the time-varying parameter could have been a pseudo-randomly selected value. Thus, the time-varying parameter being pseudo-randomly selected does not constitute patentability.

Regarding claim 6, which inherits the limitations of claim 1, Bergstrom et al. discloses at least one of the forbidden channels is associated with received interference from a jammer (column 2, lines 11-27).

Regarding claim 7, which inherits the limitations of claim 1, Bergstrom et al. discloses at least one of the forbidden hop channels is reserved for used by a communication system that is not the channel hopping communication system (column 1, lines 13-21, wherein the prohibited frequency is occupied by a jammer caused by a local TV station).

Regarding claim 8, which inherits the limitations of claim 1, Bergstrom et al. discloses dynamically determining the set of forbidden hop channels, whereby the set of the forbidden hop channels varies over time (column 2, lines 62-65 and column 3, lines 16-26).

Regarding claim 16, Bergstrom et al. discloses a hop channel selector (Fig. 4) for use in a channel hopping communication system that communicates over a physical channel and includes a sequence of hop channels, comprising a set of forbidden hop channels and a remaining set of allowable hop channels (column 2, lines 62-65), wherein the channels with interference are forbidden hop channels, the hop channel selector comprising:

logic configured to select (Fig. 4, column 2, lines 4-16) a hop channel from the sequence as a function of a present phase; and

logic configured to use a time-varying parameter to select, at the present phase, a substitute hop channel from the set of allowable hop channels (Fig. 4, column 2, lines 20-27 and column 3, lines 16-35), wherein the time-varying parameter (random number) is independent of conditions on the physical channel and a determination as to the selection of a hop channel as the substitute hop channel from the set of allowable hop channels is made each time the selected hop

channel belongs to the set of forbidden hop channels (column 5, line 49-column 6, line 28), wherein each time fx is a forbidden hop channel, a second (new) frequency is generated from the allowable hop channels (column 3, lines 13-65).

Bergstrom et al. does not disclose logic configured to use the selected hop channel for communication during the present phase if the selected hop channel is an allowable hop channel and to use the substitute hop channel for communication during the present phase if the selected hop channel is not an allowable hop channel.

However, Bergstrom et al discloses that depending on a status value, the selected hop channel or the substitute hop channel would be used for transmission (column 2, lines 21-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that if the state value met a certain specification, then the selected hop channel would be an allowable hop channel and used for communication during a present phase, but if the status value did not meet a certain specification, then the substitute hop channel would be used for communication during the present phase.

Regarding claim 17, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter is a clock value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock value could have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 18, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter and the present phase are derived from the same clock value. However, it would have been obvious to one skilled in the art at the time the invention

was made to derive the time-varying parameter and the present phase from the same clock value to eliminate phase offset from processes in the device.

Regarding claim 19, which inherits the limitations of claim 16, Bergstrom et al. further discloses the time-varying parameter is a randomly selected value (column 3, lines 13-65, random number).

Regarding claim 20, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter is a pseudo-randomly selected value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that since the time-varying parameter of Bergstrom et al. is a randomly selected value (column 3, lines 13-65) that that the time-varying parameter could have been a pseudo-randomly selected value. Thus, the time-varying parameter being pseudo-randomly selected does not constitute patentability.

Regarding claim 21, which inherits the limitations of claim 16, Bergstrom et al. discloses at least one of the forbidden channels is associated with received interference from a jammer (column 2, lines 11-27).

Regarding claim 22, which inherits the limitations of claim 16, Bergstrom et al. discloses at least one of the forbidden hop channels is reserved for used by a communication system that is not the channel hopping communication system (column 1, lines 13-21, wherein the prohibited frequency is occupied by a jammer caused by a local TV station).

Regarding claim 23, which inherits the limitations of claim 16, Bergstrom et al discloses dynamically determining the set of forbidden hop channels, whereby the set of the forbidden hop channels varies over time (column 2, lines 62-65 and column 3, lines 16-26).

Regarding claim 35, which inherits the limitations of claim 1, Bergstrom et al. discloses the substitute hop channel need not be the same as the previously selected substitute channel for the forbidden hop channel (column 3, lines 16-35), wherein the substitute channel is generated randomly.

Regarding claim 36, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter is a based on system clock. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock could have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 37, which inherits the limitations of claim 16, Bergstrom et al. discloses the substitute hop channel need not be the same as the previously selected substitute channel for the forbidden hop channel (column 3, lines 16-35), wherein the substitute channel is generated randomly.

Regarding claim 38, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter is a based on system clock. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock could have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 39, which inherits the limitations of claim 16, Bergstrom et al. discloses the substitute hop channel is selected on a dynamic basis (column 3, lines 16-35 and column 5, line 49-column 6, line 28).

Regarding claim 40, which inherits the limitations of claim 16, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the hop channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 41, which inherits the limitations of claim 16, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 42, which inherits the limitations of claim 40, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 43, which inherits the limitations of claim 1, Bergstrom et al. discloses the substitute hop channel is selected in a dynamic manner (column 3, lines 16-35 and column 5, line 49-column 6, line 28).

Regarding claim 44, which inherits the limitations of claim 11, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the hop channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 45, which inherits the limitations of claim 1, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 46, which inherits the limitations of claim 44, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

*Allowable Subject Matter*

5. Claims 10, 12-15, 25, and 27-34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom



STEPHEN CHIN  
SUPERVISORY PATENT EXAMINEE  
TECHNOLOGY CENTER 2800

Application/Control Number: 09/418,562  
Art Unit: 2634

Page 12

June 8, 2005